

SUMM When producing medium density polyethylene, the combination of a tubular with an autoclave reactors offers a broader operating window than the tubular reactor only; the produced polymers can vary from film grade with a very narrow MWD to coating type resins having a much broader MWD; by enhancing the production in the tube or in the autoclave where either a minor or a large degree of back mixing is needed. By polymerizing ethylene and optionally comonomers in an autoclave reactor, one will get a polymer product having a broad molecular weight distribution, while the polymerization in a tubular reactor will give a polymer product having a narrow molecular weight distribution; by using combinations of a tubular and autoclave reactors in series, one can, dependent on the reaction conditions and percentages of monomer polymerized in the reactors design polymer products having all kinds of intermediate molecular weight distributions. In this way the molecular weight distribution of polyethylene homo or copolymers can be manipulated with more flexibility than in a conventional autoclave reactor or in a conventional tubular reactor, while maintaining a high polymer density.

SUMM In a preferred embodiment, the process of the present invention is a high pressure process for the production of medium density polyethylene resins for extrusion coating or cast film applications.

DETD In this continuous process, polyethylene for blown film applications was obtained with an ethylene conversion rate of 21 percent. The polymer product had a MFI of 3.2 and a density of 0.930 g/cm.^{sup.3}. The amount of carbonyl incorporation was measured using ^{sup.13}C NMR and determined to be 0.19 wt percent (calculated as MEK groups in the polyethylene chain).

DETD Example 1 was repeated, yet for the preparation of polyethylene for cast film applications using the following different steady state conditions:

DETD In this continuous process, polyethylene was obtained in an ethylene conversion rate of 28 percent. The polymer product had a MFI of 2.2, a density of 0.928 g/cm.^{sup.3} and an Mw/Mn of 5.48. The amount of carbonyl incorporation was measured to be in the same level as in example 1.

DETD Example 1 was repeated, yet for the preparation of polyethylene for extrusion coating applications using the following different steady state conditions:

DETD In this continuous process, polyethylene was obtained in an ethylene conversion rate of 25 percent. The polymer product had a MFI of 4.0 and a density of 0.927 g/cm.^{sup.3}. The amount of carbonyl incorporation was measured to be in the same level as in example 1.

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SET PLURALS ON PERM
SET ABBR ON PERM

FILE 'USPATFULL, CAPLUS, JAPIO, USPAT2' ENTERED AT 12:53:25 ON 13 MAY 2007

E OHLSSON STEFAN/AU

L1 6 SEA ABB=ON PLU=ON "OHLSSON STEFAN"/AU
D L1 1-6 IBIB ABS

L2 16 SEA ABB=ON PLU=ON "OHLSSON STEFAN BERTIL"/AU
D L2 1-16 IBIB ABS

L3 1002637 SEA ABB=ON PLU=ON POLYETHYLENE OR POLYETHENE OR (COPOLYMER?
OR INTERPOLYMER?) AND ((ETHYLENE OR ETHENE) (6A) (ACRYLATE# OR
VINYL(1A) ACETATE#))

L4 1827 SEA ABB=ON PLU=ON (TELOGEN? OR TELOMER? OR CHAIN (1A)

S/N 10/796,831

TRANSFER) (S) (PROPYLENE OR PROPENE)
L5 846 SEA ABB=ON PLU=ON L3 AND L4
L6 39 SEA ABB=ON PLU=ON L5 AND RELAXATION(1A) TIME
L7 7 SEA ABB=ON PLU=ON L6 AND CHAIN(2A) BRANCH?
D L7 1-7 IBIB ABS
D L7 5 IBIB HIT
L8 30 SEA ABB=ON PLU=ON L5 AND SHORT(1A) CHAIN?(1A) BRANCH?
D L8 1-30 IBIB ABS
D L8 30 IBIB HIT
D L8 29 IBIB HIT
D L8 21 IBIB HIT
D L8 16 IBIB HIT

FILE HOME

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FILE CAPLUS

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>>> GRAPHIC IMAGES AVAILABLE <<<

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